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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,024	12/12/2003	Takanori Ikuta	81716.0116	3505
26021	7590	03/09/2005		
HOGAN & HARTSON L.L.P. 500 S. GRAND AVENUE SUITE 1900 LOS ANGELES, CA 90071-2611			EXAMINER ALEMU, EPHREM	
			ART UNIT 2821	PAPER NUMBER

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/735,024

**Applicant(s)**

IKUTA ET AL.

**Examiner**

Ephrem Alemu

**Art Unit**

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                             |                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12-12-03</u> | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,3, 5, 6, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Konishi et al. (US 6,707,427).

Re claim 1, Konishi discloses a surface-mount type antenna (Fig. 4) comprising:

a base body (i.e., substrate 21) made of a rectangular parallelepiped dielectric (Figs. 4, 5A-5E, 6; Col. 3, lines 51-53; Col. 11, lines 23-38; Col. 12, lines 27-33);

a feeding terminal (201) formed at one end of one side surface (i.e., bottom surface) of the base body (i.e., substrate 21) (Figs. 4, 5c); and

a radiating electrode (i.e., conductors 22a, 25, 22b, 24, 23), to one end of which (i.e., to one end of the first electrical conductor 22a) is connected the feeding terminal (201), disposed such that its other end is routed from one end side part of one side surface, through one end side part of one principal surface of the base body (Figs. 4, 5A), to another end side part of one principal surface (Figs. 4, 5A), or another end side part of one side surface (Figs. 4, 5A), or another end side part of another principal surface (Figs. 4, 5A), and extends farther from the other end side part to one end side part (Figs. 4, 5B) so as to be parallel to a ridge (i.e., edge) of

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the base body, and is eventually formed into an open end (Figs. 4, 5A- 5E; Col. 3, lines 39- 53; Col. 11, line 21- Col. 12, line 33).

Re claim 3, Konishi further discloses an auxiliary terminal (200a) for surface mounting is formed on the other principal surface of the base body (i.e., bottom surface of substrate 21) (Figs. 4, 5E; Col. 12, lines 27-33).

Re claim 5, as best seen in the figures, Konishi's rectangular parallelepiped base body is chamfered at its corner and ridge to produce a curved or flat chamfer (Figs 4-6)

Re claim 6, Konishi further discloses the base body is made of a dielectric material (i.e., composed of ceramics) having a relative dielectric constant  $\epsilon_r$  which is kept within a range from 3 to 30 (i.e., 21) (Figs. 4, 5A-5E, 6; Col. 12, lines 56-63).

Re claims 8 and 10, Konishi further discloses an antenna apparatus (i.e., antenna unit) (Fig. 6A) including the surface mount type antenna as discussed above in claims 1 and 3, and further comprising a mounting substrate (i.e., circuit board 26) having formed thereon a feeding electrode (i.e. power-feeding line 27) and a ground conductor layer (i.e., ground electrode 28) with a linear side edge located in a vicinity of the feeding electrode (i.e. power-feeding line 27) (Fig. 6A; Col. 11, line 60- Col. 12, line 15); wherein the antenna apparatus is constructed by mounting the surface-mount type antenna on the mounting substrate, with the other principal surface of the base body arranged on a top surface of the mounting substrate, with the ridge of the base body arranged parallel to the linear side edge of the ground conductor layer, and with the feeding terminal (201) connected to the feeding electrode (27) (Figs. 4, 5A- 5E, 6; Col. 11, line 21- Col. 12, line 33).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 4, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi et al. (US 6,707,427) in view of Nagumo et al. (US Pub. 2002/0030626).

Re claims 2 and 4, Konishi further discloses an auxiliary terminal (200a) for surface mounting is formed on the other principal surface of the base body (i.e., bottom surface of substrate 21) (Figs. 4, 5E; Col. 12, lines 27-33). However, Konishi does not disclose a through hole or a groove being formed in the base body made of a rectangular parallelepiped dielectric or magnetic material.

However, Nagumo teaches of forming through hole or groove 11 penetrating from one side surface to another side surface of a rectangular parallelepiped dielectric base member 2 for the purpose of reducing the weight of the base member (Fig. 1; page 2, paragraph 27 & 33).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Konishi's rectangular parallelepiped dielectric base body (i.e., substrate 21) by forming through hole or groove penetrating from one side surface to another side surface of the rectangular parallelepiped dielectric base member as taught by Nagumo for no other reason than reducing the weight of the rectangular parallelepiped dielectric base body (i.e., substrate 21) of Konishi as taught by as taught by Nagumo.

Re claims 9 and 11, Konishi further discloses an antenna apparatus (i.e., antenna unit) (Fig. 6A) including the surface mount type antenna as discussed above in claim 1, and further comprising a mounting substrate (i.e., circuit board 26) having formed thereon a feeding electrode (i.e. power-feeding line 27) and a ground conductor layer (i.e., ground electrode 28) with a linear side edge located in a vicinity of the feeding electrode (i.e. power-feeding line 27) (Fig. 6A; Col. 11, line 60- Col. 12, line 15); wherein the antenna apparatus is constructed by mounting the surface-mount type antenna on the mounting substrate, with the other principal surface of the base body arranged on a top surface of the mounting substrate, with the ridge of the base body arranged parallel to the linear side edge of the ground conductor layer, and with the feeding terminal (201) connected to the feeding electrode (27) (Figs. 4, 5A- 5E, 6; Col. 11, line 21- Col. 12, line 33). Therefore modifying the surface mount antenna of Konishi in view of Nagumo as discussed above in claims 2 and 4 in the antenna apparatus of Konishi would have been obvious for the purpose of reducing the weight of the base body.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi et al. (US 6,707,427) in view of Aoyama (US Pub. 2003/0006936).

Re claim 7, although, Konishi does not disclose the base body being made of a magnetic material having a relative magnetic permeability  $\mu_r$  which is kept within a range from 1 to 8, Aoyama discloses a surface mounted antenna having a base body made of dielectric or magnetic materials such as ceramic, resins, etc. having a high-dielectric constant 6 or more (Fig. 18; abstract; page 1, paragraph [0001]). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the dielectric of the base body of Konishi by a base body made of magnetic material having a relative magnetic permeability  $\mu_r$

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which is kept within a range from 1 to 8 (i.e., 6) as taught by Aoyama for the purpose of providing support for the radiating electrode to be surface mounted in a communication apparatus as taught by Aoyama.

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Konishi et al. (US 6,700,543); Kawahata et al. (US 5,959,582 & 5,861,854); Kawahata (US 5,748,149); also teach similar inventive subject matter. However the prior art listed above neither teach nor disclose the limitation described above for reason of allowance either alone or in combination.

### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA  
3-04-05

  
TAN HO  
PRIMARY EXAMINER